Remarks/Arguments

Claim 1 is amended. Claims 16-19 are withdrawn. Claims 1-15 and 20-27 are pending in the application. Support for the amendment to claim 1 is found at page 12, lines 18-31. Reexamination and reconsideration of the application, as amended, are respectfully requested.

Claim Rejections Under 35 USC § 103

Claims 1-15 and 20-27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroshi (J.P. Patent Pub. No. 2000-149976). Applicants respectfully traverse this rejection.

Claim 1 is amended as follows:

> A fuel cell assembly, which has a housing defining an electricity generation/combustion chamber, and electricity generation/combustion means disposed within said housing, and in which a fuel gas and an oxygen-containing gas are supplied to said electricity generation/combustion means, and a combustion gas formed within said electricity generation/combustion chamber is discharged from said electricity generation/combustion chamber,
>
> wherein a heat exchanger having a first channel and a second channel is disposed on the inner side of at least one wall of said housing,
>
> said combustion gas is discharged from an interior of said electricity generation/combustion chamber through said first channel of said heat exchanger, and

one of said oxygen-containing gas and said fuel gas is supplied to said electricity generation/combustion means through said second channel of said heat exchanger.

Applicant respectfully submits that Hiroshi fails to disclose or teach the following features as required by claim 1: a heat exchanger having a first channel and a second channel disposed on the inner side of at least one wall of a housing defining an electricity generation/combustion chamber. This feature allows for a compact configuration that effectively suppresses direct heat dissipation from an electricity generation/combustion chamber into the atmosphere and allows the utilization of this heat (specification page 3, lines 28-34). In addition, this feature allows for the discharge of heat and the supply of gas to the electricity generation/combustion chamber (specification page 4, lines 19-27). In contrast, Hiroshi discloses a fuel cell assembly where the heat exchanger (preheater 18) is disposed in the preheating chamber (20), which is provided above the electricity generation/combustion chamber (21) (abstract). Thus, the fuel cell chamber has the problems disclosed in the specification (page 2, lines 19-26): a bulky assembly because the heat exchange means is disposed separately from the electricity generation/combustion chamber and a lack of the utilization of heat that is dissipated into the atmosphere. Therefore, Hiroshi does not teach or suggest the fuel cell assembly of claim 1 or the technical advantages brought about by the feature.

The Examiner indicates that it would have been obvious to one skilled in the art to employ a combustion chamber that discharges gas from the interior of the combustion chamber through the heat exchanger in order to make the fuel system more compact so that the fuel cell may power smaller electrical devices. Applicant respectfully submits that if the fuel cell disclosed by Hiroshi could have discharged

gas from the interior of the combustion chamber, Hiroshis' fuel cell would still fail to disclose a heat exchanger having a first channel and a second channel disposed on the inner side of at least one wall of a housing and the technical advantages brought about by the feature.

Accordingly, Hiroshi is not obvious over the present claim 1. Likewise, dependent claims 2-15 are also patentable over Hiroshi for at least the same reasons as claim 1. In view of the foregoing, Applicant respectfully requests that the Office withdraw the rejection.

In regards to independent claim 20, Applicants respectfully traverse this rejection.

Claim 20, reads as follows:

A fuel cell assembly comprising:

a housing defining an electricity generation/combustion chamber; and

a plurality of electricity generation units arranged in parallel within said electricity generation/combustion chamber, and

wherein each of said electricity generation units comprises a fuel gas case defining a fuel gas chamber, a cell stack composed of a plurality of cells arranged on one surface of said fuel gas case, a reforming case, an unreformed gas supply pipe connected to said reforming case, and a fuel gas food pipe connecting said reforming case and said fuel gas case, and

a fuel gas within said fuel gas case is supplied to said cells.

Applicants respectfully submits that Hiroshi fails to disclose or teach the following feature of claim 20: <u>reforming cases disposed in the electricity</u>

generation/combustion chamber. Hiroshi teaches a fuel cell stack (13) disposed in the generation/combustion chamber (abstract), but does not disclose reforming cases. As stated in the Office Action at page 3, Hiroshi discloses gas supplying fuel cell assembly elements that are annexed to the electricity generation/combustion chamber and not disposed within the generation/combustion chamber. In addition, Hiroshi does not disclose or teach the technical advantages brought about by having the reforming cases in the generation/combustion chamber. The reforming cases allow the utilization of the high temperature produced within the electricity generation/combustion chamber for the reforming of the unreformed gas (specification page 21, lines 19-22).

Accordingly, Hiroshi is not obvious over the present claim 20. Likewise, dependent claims 21-23 are also patentable over Hiroshi for at least the same reasons as claim 20. In view of the foregoing, Applicant respectfully requests that the Office withdraw the rejection.

In regards to independent claim 24, Applicants respectfully traverse this rejection.

Claim 24, reads as follows:

> A fuel cell assembly, which has a housing defining an electricity generation/combustion chamber, and
>
> Electricity generation/combustion means disposed within said housing, and in which said electricity generation/combustion means includes a plurality of cell stacks, a fuel gas and an oxygen-containing gas are supplied to said electricity generation/combustion means, and a combustion gas formed within said electricity

generation/combustion chamber is discharged from said electricity generation/combustion chamber,

wherein a first gas case supplied with one of said oxygen-containing gas and said fuel gas is disposed within said housing,

said first gas case has a hollow-shaped manifold portion; and a plurality of hollow-shaped ejection portions protruding from one-side flat surface of said manifold portion substantially perpendicularly to said one-side flat surface,

said ejection portions are arranged with spacing in a first direction on said one-side flat surface,

an ejection hole is formed in at least one surface of each of said ejection portions, and

each of said cell stacks is placed between the adjacent ejection portions.

Applicants respectfully submits that Hiroshi fails to disclose or teach the following features of claim 24: (a) a first gas case supplied with one of said oxygen-containing gas and said fuel gas is disposed within said housing; (b) first gas case has a hollow-shaped manifold portion; and a plurality of hollow-shaped ejection portions protruding from one-side flat surface of said manifold portion substantially perpendicularly to said one-side flat surface; (c) ejection portions are arranged with spacing in a first direction on said one-side flat surface; (d) ejection hole is formed in at least one surface of each of said ejection portions; and (e) cell stacks is placed between the adjacent ejection portion. Hiroshi does not disclose any of features (a)-(f) as recited in claim 24 (abstract). Likewise, Hiroshi does not disclose or teach the technical advantages, regarding the discharge and supply of oxygen containing gas,

brought about by these features as disclosed in Applicants specification at page 3, lines 14-25; page 4, lines 7-13; and page 6, lines 5-11.

Accordingly, Hiroshi is not obvious over the present claim 24. Likewise, dependent claims 25-27 are also patentable over Hiroshi for at least the same reasons as claim 24. In view of the foregoing, Applicant respectfully requests that the Office withdraw the rejection.

Conclusion

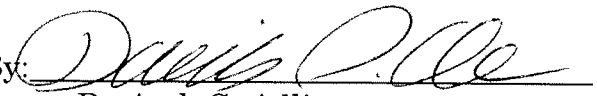
In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 785-4600 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: January 17, 2008

By: 
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